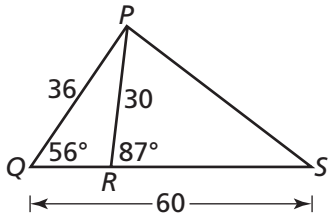
Name _____ Class _____ Date _____

Additional Practice

Lessons 4.14 and 4.15

Use the figure for Exercises 1–14. $\triangle PQS \sim \triangle RPS$. $m\angle Q = 56°$, $m\angle PRS = 87°$, $PQ = 36$, $QS = 60$, and $RP = 30$.



Find each measure.

1. $m\angle PRQ$ **2.** $m\angle QPR$ **3.** $m\angle RPS$ **4.** $m\angle QPS$

5. $m\angle S$ **6.** PS **7.** RS **8.** QR

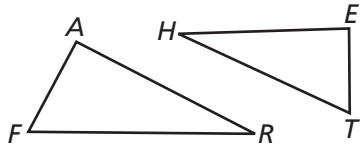
Decide whether each statement is correct.

9. $\triangle PSQ \sim \triangle RSP$ **10.** $\triangle PRS \sim \triangle QPS$ **11.** $\triangle RPS \sim \triangle SQP$

12. $\triangle SQP \sim \triangle SPR$ **13.** $\triangle QSP \sim \triangle RSP$ **14.** $\triangle SQP \sim \triangle SPR$

In Exercises 15–22, $\triangle FAR \sim \triangle TEH$. Complete each statement.

15. $\frac{FR}{TH} = \frac{AF}{\square}$ **16.** $\frac{EH}{TE} = \frac{\square}{FA}$ **17.** $\frac{\square}{RA} = \frac{HT}{HE}$



18. $\angle A \cong \square$ **19.** $\angle T \cong \square$ **20.** $\angle H \cong \square$

21. $\triangle ARF \sim \square$ **22.** $\triangle ETH \sim \square$

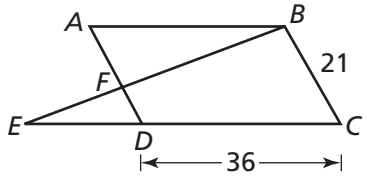
23. The sides of a triangle have lengths 5, 6, and 8. A triangle similar to it has a side of length 10. Write all side lengths of each possible similar triangle.

24. The sides of a triangle have lengths 12, 18, and 18. A triangle similar to it has a side of length 8. Write all side lengths of each possible similar triangle.

25. A triangle has sides of length 5, 7, and 8. A triangle similar to it has a perimeter of 15. What are the lengths of the sides of this triangle?

26. A triangle has sides of length 9, 12, and 15. A triangle similar to it has a perimeter of 40. What are the lengths of the sides of this triangle?

Use the diagram for Exercises 27–29.



27. Figure $ABCD$ is a parallelogram. Prove that $\triangle ABF \sim \triangle DEF$.

28. Suppose $m\angle E = 20°$ and $m\angle C = 60°$. Find the measure of each angle.
a. $\angle EBA$ **b.** $\angle A$ **c.** $\angle EDF$

29. Is $\triangle ABF \sim \triangle CEB$? Explain.